

## ABSTRACT

Methods for immunizing, and immunogen pharmaceutical compositions for eliciting a heterologous immune response to HIV-1 in an animal, preferably a human, are provided, utilizing a modified HIV-1 envelope protein or fragment or DNA encoding a modified HIV-1 envelope protein or fragment, the modified protein having a HIV-1 envelope protein V2 region deletion. A humoral response against heterologous HIV-1 strains is achieved.